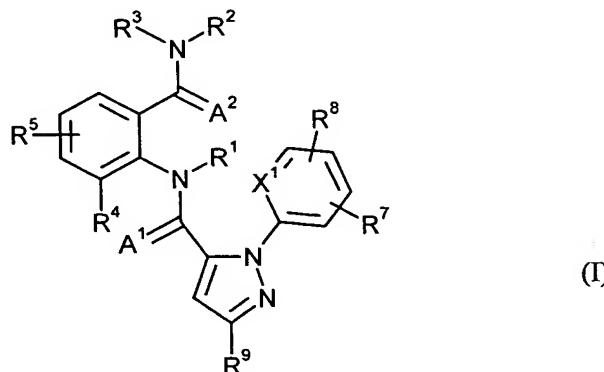


Claims

1. A composition comprising a synergistically effective active compound combination of anthranilamides of the formula (I)



5

in which

A<sup>1</sup> and A<sup>2</sup> independently of one another represent oxygen or sulfur,

X<sup>1</sup> represents N or CR<sup>10</sup>,

10 R¹ represents hydrogen or represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl or C₃-C₆-cycloalkyl, each of which is optionally mono- or polysubstituted, where the substituents independently of one another may be selected from the group consisting of R⁶, halogen, cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₂-C₄-alkoxycarbonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino, (C₁-C₄-alkyl)-C₃-C₆-cycloalkylamino and R¹¹,

15 R² represents hydrogen, C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₄-alkoxy, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino, C₂-C₆-alkoxycarbonyl or C₂-C₆-alkylcarbonyl,

20 R³ represents hydrogen, R¹¹ or represents C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, each of which is optionally mono- or polysubstituted, where the substituents independently of one another may be selected from the group consisting of R⁶, halogen, cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylcarbonyl, C₃-C₆-trialkylsilyl, R¹¹, phenyl, phenoxy and a 5- or 6-membered heteroaromatic ring, where each phenyl, phenoxy and 5- or 6-membered heteroaromatic ring may optionally be substituted and where the substituents independently of one another may be selected from one to three radicals W or one or more radicals R¹², or

R<sup>2</sup> and R<sup>3</sup> may be attached to one another and form the ring M,

R⁴ represents hydrogen, C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₆-cycloalkyl, C₁-C₆-haloalkyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, C₃-C₆-halocycloalkyl, halogen, cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulfinyl, C₁-C₄-haloalkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino, C₃-C₆-trialkylsilyl or represents phenyl, benzyl or phenoxy, each of which is optionally mono- or polysubstituted, where the substituents independently of one another may be selected from the group consisting of C₁-C₄-alkyl, C₂-C₄-alkenyl, C₂-C₄-alkynyl, C₃-C₆-cycloalkyl, C₁-C₄-haloalkyl, C₂-C₄-haloalkenyl, C₂-C₄-haloalkynyl, C₃-C₆-halocycloalkyl, halogen, cyano, nitro, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino, C₃-C₆-(alkyl)cycloalkylamino, C₂-C₄-alkylcarbonyl, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylaminocarbonyl, C₃-C₈-dialkylaminocarbonyl and C₃-C₆-trialkylsilyl,

R⁵ and R⁸ in each case independently of one another represent hydrogen, halogen or represent in each case optionally substituted C₁-C₄-alkyl, C₁-C₄-haloalkyl, R¹², G, J, -OJ, -OG, -S(O)_p-J, -S(O)_p-G, -S(O)_p-phenyl, where the substituents independently of one another may be selected from one to three radicals W or from the group consisting of R¹², C₁-C₁₀-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₁-C₄-alkoxy and C₁-C₄-alkylthio, where each substituent may be substituted by one or more substituents independently of one another selected from the group consisting of G, J, R⁶, halogen, cyano, nitro, amino, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulfinyl, C₁-C₄-haloalkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-trialkylsilyl, phenyl and phenoxy, where each phenyl or phenoxy ring may optionally be substituted and where the substituents independently of one another may be selected from one to three radicals W or one or more radicals R¹²,

G in each case independently of one another represents a 5- or 6-membered non-aromatic carbocyclic or heterocyclic ring which may optionally contain one or two ring members from the group consisting of C(=O), SO and S(=O)₂ and which may optionally be substituted by one to four substituents independently of one another selected from the group consisting of C₁-C₂-alkyl, halogen, cyano, nitro and C₁-C₂-alkoxy, or independently of one another represents C₂-C₆-alkenyl, C₂-C₆-alkynyl, C₃-C₇-cycloalkyl, (cyano)-C₃-C₇-cycloalkyl, (C₁-C₄-alkyl)-C₃-C₆-cycloalkyl, (C₃-C₆-cycloalkyl)-C₁-C₄-alkyl, where each cycloalkyl, (alkyl)cycloalkyl and (cycloalkyl)-alkyl may optionally be substituted by one or more halogen atoms,

J in each case independently of one another represents an optionally substituted 5- or 6-membered heteroaromatic ring, where the substituents independently of one another may be selected from one to three radicals W or one or more radicals R¹²,

5 R⁶ independently of one another represents -C(=E¹)R¹⁹, -LC(=E¹)R¹⁹, -C(=E¹)LR¹⁹, -LC(=E¹)LR¹⁹, -OP(=Q)(OR¹⁹)₂, -SO₂LR¹⁸ or -LSO₂LR¹⁹, where each E¹ independently of one another represents O, S, N-R¹⁵, N-OR¹⁵, N-N(R¹⁵)₂, N-S=O, N-CN or N-NO₂,

10 R⁷ represents hydrogen, C₁-C₄-alkyl, C₁-C₄-haloalkyl, halogen, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulfinyl, C₁-C₄-haloalkylsulfonyl,

15 R⁹ represents C₁-C₄-haloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylsulfinyl or halogen,

R¹⁰ represents hydrogen, C₁-C₄-alkyl, C₁-C₄-haloalkyl, halogen, cyano or C₁-C₄-haloalkoxy,

20 R¹¹ in each case independently of one another represents in each case optionally mono- to trisubstituted C₁-C₆-alkylthio, C₁-C₆-alkylsulfenyl, C₁-C₆-haloalkylthio, C₁-C₆-haloalkylsulfenyl, phenylthio or phenylsulfenyl, where the substituents independently of one another may be selected from the list W, -S(O)_nN(R¹⁶)₂, -C(=O)R¹³, -L(C=O)R¹⁴, -S(C=O)LR¹⁴, -C(=O)LR¹³, -S(O)_nNR¹³C(=O)R¹³, -S(O)_nNR¹³C(=O)LR¹⁴ or -S(O)_nNR¹³S(O)₂LR¹⁴,

25 L in each case independently of one another represents O, NR¹⁸ or S,

R¹² in each case independently of one another represents -B(OR¹⁷)₂, amino, SH, thiocyanato, C₃-C₈-trialkylsilyloxy, C₁-C₄-alkyl disulfides, -SF₅, -C(=E¹)R¹⁹, -LC(=E¹)R¹⁹, -C(=E¹)LR¹⁹, -LC(=E¹)LR¹⁹, -OP(=Q)(OR¹⁹)₂, -SO₂LR¹⁹ or -LSO₂LR¹⁹,

Q represents O or S,

30 R¹³ in each case independently of one another represents hydrogen or represents in each case optionally mono- or polysubstituted C₁-C₆-alkyl, C₂-C₆-alkenyl, C₂-C₆-alkynyl or C₃-C₆-cycloalkyl, where the substituents independently of one another may be selected from the group consisting of R⁶, halogen, cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino or (C₁-C₄-alkyl)-C₃-C₆-cycloalkylamino,

35 R¹⁴ in each case independently of one another represents in each case optionally mono- or polysubstituted C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₂-C₂₀-alkynyl or C₃-C₆-cycloalkyl, where the substituents independently of one another may be selected from the group consisting of R⁶, halogen, cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino and (C₁-C₄-alkyl)-C₃-C₆-cycloalkylamino or represent optionally substituted phenyl,

where the substituents independently of one another may be selected from one to three radicals W or one or more radicals R¹²,

- R¹⁵ in each case independently of one another represents hydrogen or represents in each case optionally mono- or polysubstituted C₁-C₆-haloalkyl or C₁-C₆-alkyl, where the substituents independently of one another may be selected from the group consisting of cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulfinyl, C₁-C₄-haloalkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylcarbonyl, C₃-C₆-trialkylsilyl and optionally substituted phenyl, where the substituents independently of one another may be selected from one to three radicals W or one or more radicals R¹², or N(R¹⁵)₂ represents a cycle which forms the ring M,
- R¹⁶ represents C₁-C₁₂-alkyl or C₁-C₁₂-haloalkyl, or N(R¹⁶)₂ represents a cycle which forms the ring M,
- R¹⁷ in each case independently of one another represents hydrogen or C₁-C₄-alkyl, or B(OR¹⁷)₂ represents a ring in which the two oxygen atoms are attached via a chain having two to three carbon atoms which are optionally substituted by one or two substituents independently of one another selected from the group consisting of methyl and C₂-C₆-alkoxycarbonyl,
- R¹⁸ in each case independently of one another represents hydrogen, C₁-C₆-alkyl or C₁-C₆-haloalkyl, or N(R¹³)(R¹⁸) represents a cycle which forms the ring M,
- R¹⁹ in each case independently of one another represents hydrogen or represents in each case mono- or polysubstituted C₁-C₆-alkyl, where the substituents independently of one another may be selected from the group consisting of cyano, nitro, hydroxyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulfinyl, C₁-C₄-haloalkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, CO₂H, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylcarbonyl, C₃-C₆-trialkylsilyl and optionally substituted phenyl, where the substituents independently of one another may be selected from one to three radicals W, C₁-C₆-haloalkyl, C₃-C₆-cycloalkyl or phenyl or pyridyl, each of which is optionally mono- to trisubstituted by W,
- M in each case represents an optionally mono- to tetrasubstituted ring which, in addition to the nitrogen atom attached to the substituent pair R¹³ and R¹⁸, (R¹⁵)₂ or (R¹⁶)₂, contains two to six carbon atoms and optionally additionally a further nitrogen, sulfur or oxygen atom, where the substituents independently of one another may be

selected from the group consisting of C₁-C₂-alkyl, halogen, cyano, nitro and C₁-C₂-alkoxy,

W in each case independently of one another represents C₁-C₄-alkyl, C₂-C₄-alkenyl, C₂-C₄-alkynyl, C₃-C₆-cycloalkyl, C₁-C₄-haloalkyl, C₂-C₄-haloalkenyl, C₂-C₄-haloalkynyl, C₃-C₆-halocycloalkyl, halogen, cyano, nitro, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio, C₁-C₄-alkylsulfinyl, C₁-C₄-alkylsulfonyl, C₁-C₄-alkylamino, C₂-C₈-dialkylamino, C₃-C₆-cycloalkylamino, (C₁-C₄-alkyl)-C₃-C₆-cycloalkylamino, C₂-C₄-alkylcarbonyl, C₂-C₆-alkoxycarbonyl, CO₂H, C₂-C₆-alkylaminocarbonyl, C₃-C₈-dialkylaminocarbonyl or C₃-C₆-trialkylsilyl,

n in each case independently of one another represents 0 or 1,

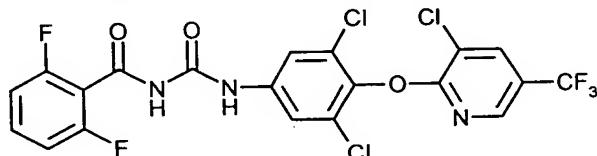
p in each case independently of one another represents 0, 1 or 2,

where, if (a) R⁵ represents hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylthio or halogen and (b) R⁸ represents hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₂-C₆-haloalkenyl, C₂-C₆-haloalkynyl, C₁-C₄-haloalkoxy, C₁-C₄-haloalkylthio, halogen, C₂-C₄-alkylcarbonyl, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylaminocarbonyl or C₃-C₈ dialkylaminocarbonyl, (c) at least one substituent selected from the group consisting of R⁶, R¹¹ and R¹² if present and (d) if R¹² is not present, at least one of the radicals R⁶ and R¹¹ is different from C₂-C₆-alkylcarbonyl, C₂-C₆-alkoxycarbonyl, C₂-C₆-alkylaminocarbonyl and C₃-C₈-dialkylaminocarbonyl, and where the compound of the general formula (I) may also be an N-oxide or salt,

and at least one insecticidally active compound from groups 2 below, selected from

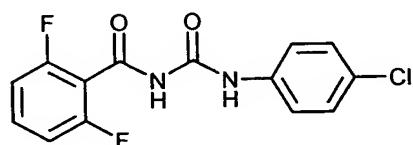
A) benzoylureas, preferably

(2-1) chlorfluazuron (known from DE-A 28 18 830)



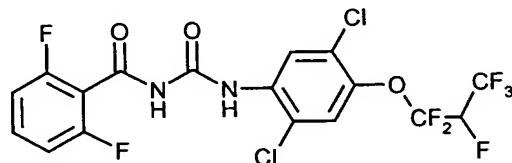
and/or

(2-2) diflubenzuron (known from DE-A 21 23 236)



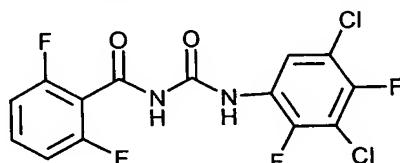
30 and/or

(2-3) lufenuron (known from EP-A 0 179 022)



and/or

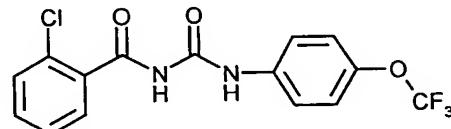
(2-4) teflubenzuron (known from EP-A 0 052 833)



5

and/or

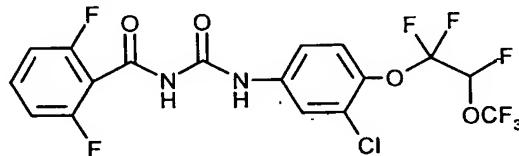
(2-5) triflumuron (known from DE-A 26 01 780)



and/or

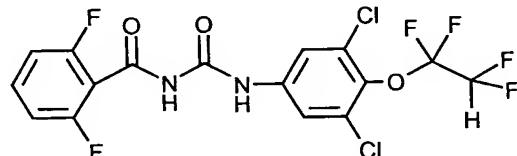
10

(2-6) novaluron (known from US 4,980,376)



and/or

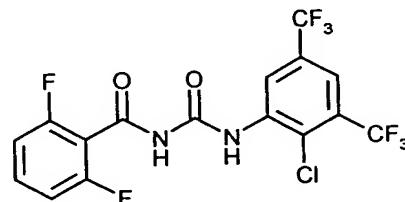
(2-7) hexaflumuron (known from EP-A 0 071 279)



15

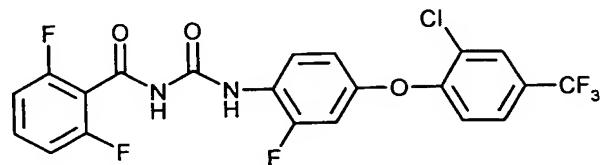
and/or

(2-8) bistrifluoron (DBI-3204) (known from WO 98/00394)



and/or

(2-22) flufenoxuron (known from EP-A 0 161 019)



and/or

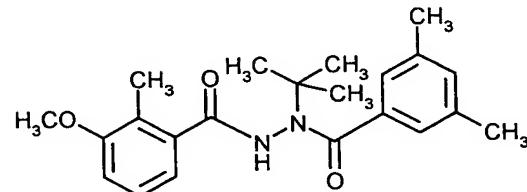
B) macrolides, preferably

5 (2-9) emamectin (known from EP-A 0 089 202)

and/or

C) diacylhydrazines, preferably

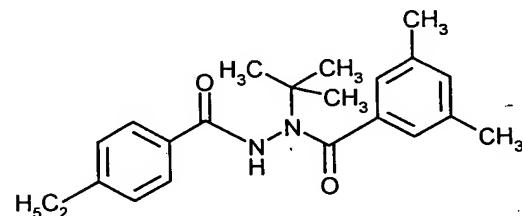
(2-10) methoxyfenozide (known from EP-A 0 639 559)



10

and/or

(2-11) tebufenozide (known from EP-A-339 854)



and/or

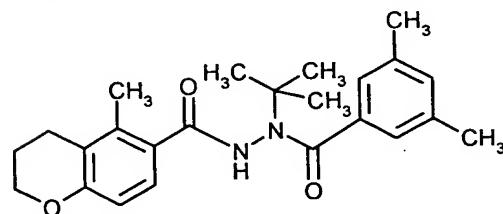
(2-12) halofenozide (known from EP-A 0 228 564)



15

and/or

(2-13) chromafenozide (ANS-118) (known from EP-A 0 496 342)



and/or

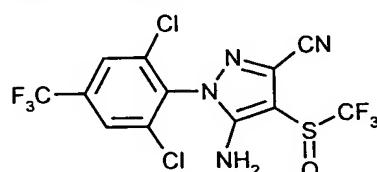
(2-14) Trichogramma spp. (known from The Pesticide Manual, 11th Edition, 1997, p. 1236)

and/or

(2-15) Verticillium lecanii (known from The Pesticide Manual, 11th Edition, 1997, p. 1266)

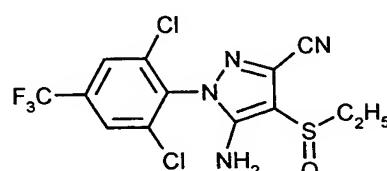
and/or

5 (2-16) fipronil (known from EP-A 0 295 117)



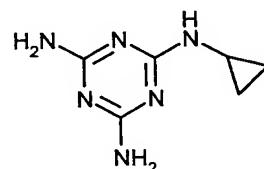
and/or

(2-17) ethiprole (known from DE-A 196 53 417)



10 and/or

(2-18) cyromazine (known from DE-A 27 36 876)

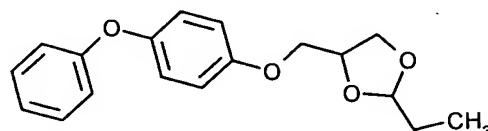


and/or

(2-19) azadirachtin (known from The Pesticide Manual, 11th Edition, 1997, p. 59)

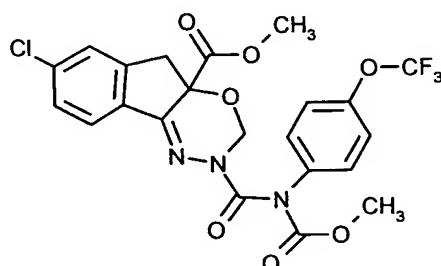
15 and/or

(2-20) diofenolan known from DE-A 26 55 910)

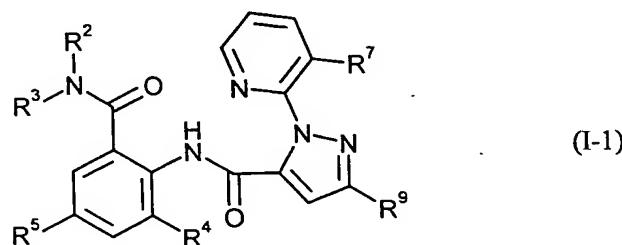


and/or

(2-21) indoxacarb (known from WO 92/11249)



2. The composition as claimed in claim 1 comprising at least one active compound from the group of the anthranilamides of the formula (I-1) in which



in which

- 5 R^2 represents hydrogen or $C_1\text{-}C_6\text{-alkyl}$,
- R^3 represents $C_1\text{-}C_6\text{-alkyl}$ which is optionally substituted by one R^6 ,
- R^4 represents $C_1\text{-}C_4\text{-alkyl}$, $C_1\text{-}C_2\text{-haloalkyl}$, $C_1\text{-}C_2\text{-haloalkoxy}$ or halogen,
- R^5 represents hydrogen, $C_1\text{-}C_4\text{-alkyl}$, $C_1\text{-}C_2\text{-haloalkyl}$, $C_1\text{-}C_2\text{-haloalkoxy}$ or halogen,
- 10 R^6 represents $-C(=E^2)R^{19}$, $-LC(=E^2)R^{19}$, $-C(=E^2)LR^{19}$ or $-LC(=E^2)LR^{19}$, where each E^2 independently of one another represents O, S, $N\text{-}R^{15}$, $N\text{-}OR^{15}$, $N\text{-}N(R^{15})_2$, and each L independently of one another represents O or NR^{18} ,
- R^7 represents $C_1\text{-}C_4\text{-haloalkyl}$ or halogen,
- R^9 represents $C_1\text{-}C_2\text{-haloalkyl}$, $C_1\text{-}C_2\text{-haloalkoxy}$, $S(O)_p\text{-}C_1\text{-}C_2\text{-haloalkyl}$ or halogen,
- 15 R^{15} in each case independently of one another represents hydrogen or represents in each case optionally substituted $C_1\text{-}C_6\text{-haloalkyl}$ or $C_1\text{-}C_6\text{-alkyl}$, where the substituents independently of one another may be selected from the group consisting of cyano, $C_1\text{-}C_4\text{-alkoxy}$, $C_1\text{-}C_4\text{-haloalkoxy}$, $C_1\text{-}C_4\text{-alkylthio}$, $C_1\text{-}C_4\text{-alkylsulfinyl}$, $C_1\text{-}C_4\text{-alkylsulfonyl}$, $C_1\text{-}C_4\text{-haloalkylthio}$, $C_1\text{-}C_4\text{-haloalkylsulfinyl}$ and $C_1\text{-}C_4\text{-haloalkylsulfonyl}$,
- 20 R^{18} in each case represents hydrogen or $C_1\text{-}C_4\text{-alkyl}$,
- R^{19} in each case independently of one another represents hydrogen or $C_1\text{-}C_6\text{-alkyl}$,
- p independently of one another represents 0, 1, 2.

3. The composition as claimed in claim 1 or 2 comprising at least one active compound of group 2 selected from

(2-5) triflumuron
(2-22) flufenoxuron
5 (2-9) emamectin
(2-10) methoxyfenozide
(2-16) fipronil
(2-17) ethiprole
(2-21) indoxacarb.

10

4. The composition as claimed in claim 1, 2 or 3 comprising anthranilamides of the formula (I) and at least one active compound from group 2 in a ratio of 200:1 to 1:200.

15

5. The use of a synergistically effective mixture as defined in claim 1, 2, 3 or 4 for controlling animal pests.

6. A process for preparing pesticides, characterized in that a synergistically effective mixture as defined in claim 1, 2, 3 or 4 is mixed with extenders and/or surfactants.

20

7. A method for controlling animal pests, characterized in that synergistically effective mixtures as defined in claim 1, 2, 3 or 4 are allowed to act on animal pests and/or their habitat.